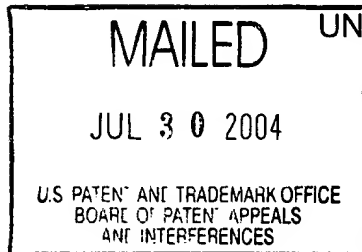The opinion in support of the decision being entered today was **not** written
for publication in a law journal and is **not** binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte CHRISTOPHER H. GENLY

_____

Appeal No. 2003-1438
Application No. 09/494,796

_____

ON BRIEF

_____

Before KRASS, BARRY and NAPPI, **Administrative Patent Judges.**

NAPPI, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of

claims 1-30.

The Invention

The invention relates to a system that allows a device to respond to

conversational speech (appellant's specification, page 3). The system creates a state

vector, which is a representation of the meaning of an utterance by a user. The state

vector includes variables that can be classified as SELECT or WHERE variables (see

page 6 of appellant's specification). The system also generates a history and in-context

vectors, which are used to decode pronouns or determine omitted variables (see pages

10 and 15 of appellant's specification).

Claims 1 and 13 are representative of the invention and are reproduced below:

1.   An article comprising a medium for storing instructions that cause a
processor-based system to:

develop a state vector representing the meaning of a spoken query; and

form an attribute, value pair for said state vector.

13.   An article comprising a medium for storing instructions that cause a
processor-based system to:

develop a first representation of a current user query;

develop a second representation of a previous user query; and

determine whether the first representation includes only one of two types of
variables, and if so, merge the first representation with the second representation to
form a third representation.

References

Junqua et al. (Junqua)	6,324,512	Nov. 27, 2001
		(filed Aug. 26, 1999)
Haddock et al. (Haddock)	5,265,014	Nov. 23, 1993

Rejections at Issue

Claims 1 through 3 and 6 through 10 stand rejected under 35 U.S.C. § 102 as being anticipated by Haddock. Claims 4, 5 and 11 through 25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Haddock. Claims 26 through 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over Haddock in view of Junqua.

Opinion

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the briefs,[1] along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

With full consideration being given to the subject matter on appeal, the examiner's rejections and the arguments of appellant and examiner, for the reasons stated *infra*, we sustain the examiner's rejection of claims 1 through 3 and 6 through 10 under 35 U.S.C. § 102 and the examiner's rejection of claims 4, 5, 11 through 13, 18, 23, 24 and 26 through 30 under 35 U.S.C. § 103. However, we reverse the examiner's rejection of claims 14 through 17, 19, 20, through 22 and 25 under 35 U.S.C. § 103.

---

[1] This decision is based upon the Appeal Brief received August 16, 2002 (certified as being mailed on August 7, 2002 in accordance with 37 C.F.R. § 1.8(a)) and the Reply Brief received January 22, 2003 (certified as being mailed on January 14, 2003 in accordance with 37 C.F.R. § 1.8(a)).

Grouping of the Claims

At the outset, we note that appellant states on page 18 of the brief that:

For convenience on appeal, claims may be grouped as follows with the group representative claim indicated by underlining.

Group A: Claims <u>1</u>, 2, 3, 6, 7, 8, 9, 10
Group B: Claims <u>13</u>, 4, 5, 11, 12, 18, 23, 26, 27, 28, 29, 30
Group C: Claims <u>14</u>, 19, 25
Group D: Claims <u>15</u>, 20
Group E: Claims <u>16</u>, 21
Group F: Claims <u>17</u>, 22
Group G: Claim <u>24</u>

37 C.F.R. § 1.192(c) (7) (July 1, 2002) as amended at 62 Fed. Reg. 531196

(October 10, 1997), which was controlling at the time of appellant filing the brief, states:

For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and, in the argument under paragraph (c) (8) of this section, appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable.

We will consider the claims as grouped by appellant with the representative

claims as selected by the appellant.

The rejection under 35 U.S.C. § 102

Appellant argues on page 18 of the brief that Haddock does not teach either

formulating a state vector or creating attribute value pairs. On page 19 of the brief,

appellant argues:

Haddock never suggests using a state vector and certainly there is no attempt to break each state vector into attribute value pairs. In

-4-

contrast, the entire question is broken down into its semantic meaning, namely whether or not it includes nouns, phrases, verbs or sentences. Then, an attempt is made to determine what any pronouns mean by finding the pronouns and then looking to history to resolve their meaning. Again, there is never any attempt to set up state vectors or attribute, value pairs.

In order to consider the examiner's application of the applied prior art to the appealed claims, we must first interpret the claims in light of the written description in appellant's specification as it would be interpreted by one of ordinary skill in this art. *See generally, In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000); *In re Morris,* 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). "The terms used in the claims bear a 'heavy presumption' that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art." *Texas Digital Sys, Inc. v. Telegenix, Inc.,* 308 F.3d 1193, 1202, 64 USPQ2d 1812, 1817 (Fed. Cir. 2002).

We are not convinced by appellant's argument that Haddock's teaching to break down a request based upon semantic processing is different than appellant's claimed state vector. The term "state vector" is defined in claim 1 as "representing the meaning of a spoken query." The limitation "attribute, value pair" is not defined in the appellant's specification, however, the values are described, on page 19 of appellant's specification, as "simple structures such as integers, strings, lists or other database records." Further, on page 7 of appellant's specification, the values are described as used to perform a database query. Thus, we find that the scope of claim 1 includes a

representation of a spoken query and that the query contains a pair of values, where the

values are not limited to numerical values.

On page 16 of the answer, the examiner refers to Haddock at column 6,

lines 29-41 and states:

> The system process the query to generate the syntactic structure
> (WHICH X s.t. (PAINT*REF(he) X)), which reads on the "state vector",
> and the request of the query is to find any values of X that meet the
> condition of (PAINT*REF(he) X).

We concur with the examiner. The syntactical analysis " (WHICH X s.t.

(PAINT*REF(he) X))" is described in column 6, lines 31 to 34 of Haddock as a

representation of the query. Haddock identifies, in column 4, lines 18 to 32, that

software to recognize spoken words can be used to capture the user query. Further, we

find that Haddock teaches that syntactical analysis can contain two variables. In the

example syntactical analysis of query 2, discussed in column 6, there are two values

PAINT and DEGAS (the resolution of the ambiguity concerning REF(he)). These values

are translated to a database query (see Haddock, column 6, lines 48 to 64). Thus,

while appellant might intend for the limitation of a state vector to be different from the

syntactical analyses of Haddock, we find no claimed difference.

On page 2 of the reply brief appellant argues:

> This concept of an attribute which is capable of having different
> values and the simplification it achieves is no where suggested in
> Haddock. Haddock's grammatical approach overlooks this claimed
> approach which results in considerable ability to simplify speech analysis.

We are not convinced by this argument. As stated *supra*, we find that Haddock

does teach attributes having values and we do not find any limitations in claim 1 which

define a difference from Haddock's grammatical approach. Accordingly, we sustain the

examiner's rejection of claims 1 through 3 and 6 through 10 under 35 U.S.C. § 102 as

being anticipated by Haddock.

The rejections under 35 U.S.C. § 103

Group B

First, we consider the rejection of the claims in group B (claims 13, 4, 5, 11, 12,

18, 23, 26, 27, 28, 29, 30) under 35 U.S.C. § 103 as being unpatentable over Haddock.

On page 19 of the brief, appellant states that claim 13 calls for developing three

representations of queries, a current representation, a previous representation and a

third representation by merging the first and second if it is determined that the first

representation only contains one of two types of variables. Appellant argues, on page

19 of the brief, that Haddock does not teach this feature.

The examiner responds, on pages 16 and 17 of the answer, by stating:

> Haddock processes the user query to generate the syntactic
> structure, which reads on "developing a first representation", tracks and
> maintains previous user queries, which reads on developing a second
> representation and Haddock discloses . . . the system uses the history
> information to determine whom "he" refers (col. 6, lines 48-60) which
> reads on "merging the first representation with the second representation
> to form a third representation."

We concur with the examiner. Haddock teaches that syntactical and semantics

processing is used to identify any reference expressions in the query (see Haddock,

column 5, lines 23 to 25 and column 6, lines 15 to 38). Haddock describes the

operation of his device by way of example. Haddock does not directly state the

variables in the query are categorized into two types. However, in the example of

-7-

query 2, discussed in column 6, Haddock identifies that the semantic processing

determines the unambiguous variable "semantic predicate"[2] (column 6, lines 39 to 41),

which necessarily requires a semantic subject. Further, Haddock teaches that the

ambiguity in the query (which is the subject of query 2) is resolved by merging the

subject, "DEGAS" from the history of the dialog (see Haddock, column 6, lines 48 to 60).

This process is in contrast to the example of query 1, discussed in column 5, lines 45 to

48, which contains both an unambiguous subject and predicate, and is not merged with

another representation. Thus, we find that Haddock teaches that if the first

representation includes only one unambiguous variable, of the two possible

unambiguous variables, then the history file is used to resolve the ambiguity to produce

an unambiguous representation. Accordingly, we sustain the examiner's rejection of

claims 4, 5, 11-13, 18, 23 and 26 to 30.

Group C

We next consider the rejection of the claims in group C (claims 14, 19, 25) under

35 U.S.C. § 103 as being unpatentable over Haddock. On page 20 of the brief,

appellant states that "claim 14 requires determining whether the first representation only

includes a where variable and, in such case, using the second representation to form a

third representation while inserting the where variable in the second representation."

Further, appellant states that "[t]he where variable provides restrictions on the scope of

what the user has asked for." Applicant argues, on page 20 of the brief that "the

Haddock reference does not disclose anything even remotely similar to claim 14."

---

[2] Predicate is defined as a syntactic unit that functions as one of the two main constituents of a simple sentence, the other being the subject. The Random House College Dictionary, revised edition (1982).

We concur with appellant. We find that the scope of each of claims 14, 19 and 25 includes forming the third representation by inserting the where variable from the current query (first representation) into the previous query (second representation) if the first representation contains only the where variable. As discussed *supra,* we find that Haddock teaches that the past query is used to provide variables missing from the present query. However, we do not find that Haddock teaches that a variable from a present query should be inserted into the prior query. Accordingly, we will not sustain the rejection of claims 14, 19 and 25.

Group D

We next consider the rejection of claims in group D (claims 15 and 20) under 35 U.S.C. § 103 as being unpatentable over Haddock. On page 21 of the brief, appellant states that claim 15 "relates to an article that determines whether the first representation has only a select variable, uses the second representation to form a third representation and inserts the select variable into the second representation." Applicant argues, on page 21 of the brief that "this feature is no where disclosed in the cited reference."

We concur with appellant. We find that the scope of each of claims 15 and 20 includes forming the third representation by inserting the select variable from the current query (first representation) into the previous query (second representation) if the first representation contains only the select variable. As discussed *supra,* we find that Haddock teaches that the past query is used to provide variables missing from the present query. However, we do not find that Haddock teaches that a variable from a

-9-

present query should be inserted into the prior query. Accordingly, we will not sustain

the rejection of claims 15 and 20.

Group E

We next consider the rejection of claims in group E (claims 16, 21) under

35 U.S.C. § 103 as being unpatentable over Haddock. On page 21 of the brief,

appellant states that claim 16 includes the limitation to "determine whether neither a

where or a select variable is contained in the first representation . . . if so, the third

representation vector is made the same as the second representation." Appellant

argues on page 21 of the brief that Haddock does not teach this limitation.

The examiner states on page 18 of the answer:

> Haddock indicates an example of multiple ambiguity "Which of these did
> he paint ?", a query with neither variable specifically indicated (col. 7, lines
> 10-35). In this instance, the user query or representation is not made up
> of any variables specifically provided for by the users input, but instead is
> formed based on the saved dialog history ("second representation") when
> the system uses the dialog history to resolve any ambiguities, which reads
> on "make the third representation the same as the second representation.

We disagree with the examiner's rationale. We do not find that the example

query 4, discussed in column 7, lines 10 to 35 of Haddock, teaches that the third

representation is made the same as the past representation. Haddock teaches that to

resolve query 4, the user of the device must use a pointing device to resolve the

ambiguity in the query (see column 5, lines 62-65 and column 7 lines 31 and 32), and

once the ambiguity is resolved it is input into the syntactic representation of query 4.

Thus, Haddock teaches the dialog history is used to provide the missing variables in the

-10-

query, and does not teach using the dialog history to become the query as is required by claims 16 and 21. Accordingly, we will not sustain the rejection of claims 16 and 21.

Group F

We next consider the rejection of claims in group F (claims 17, 22) under 35 U.S.C. § 103 as being unpatentable over Haddock. Appellant states on page 22 of the brief that claim 17 calls for a system to determine whether both a where and a select variable are contained in the first representation, and, if so, the first representation is used to form the third representation and the third representation is used as the second representation. Appellant argues that the rejection is improper as "[t]he reference does not even concern itself with select and where variables and whether or not both variables are present in the utterance."

The examiner's response to this argument is on page 19 of the answer. The examiner argues that Haddock teaches:

> [I]f the utterance contains both of the attributes of the utterance, there is no ambiguous query and there is no need to use the history vector, as indicated in col. 5, lines 33-42, in which the query provided includes the names of the specific painter of whom a user wishes to retrieve information (query 1 and query 2), which reads on "determining whether both a where variable and a select variable are contained in the first representation." Thus, the user's actual utterance "first representation" is used to generate the "third representation", and all user input is saved in the dialog history, which reads on "use the third representation as the second representation."

We disagree with the examiner's application of Haddock. The scope of both claims 17 and 22 includes that a determination is made to ascertain whether both a select and a where variable are contained in the first representation. The terms where

and select variable are defined in appellant's specification on pages 6 and 7. A select

variable is defined, on page 6 of appellant's specification, as " represent[ing] information

the user is requesting" and a where variable is defined, on page 7 of appellant's

specification, as "provides restrictions on the scope of what the user has asked for."

Although, as stated *supra*, we find that Haddock does teach that a determination is

made to ascertain if only one of two variables is present in the first representation, we

do not find that Haddock teaches that the variables are "select" and "where" variables

as defined by the appellant's specification. Accordingly, we will not sustain the

examiner's rejection of claims 17 and 22.

Group G

We next consider the rejection of claims in group G (claim 24) under 35 U.S.C.

§ 103 as being unpatentable over Haddock. Appellant states on page 23 of the brief

that:

> Claim 24 adds the limitation that the software develops a state
> vector representing the meaning of a spoken query. The state vector is
> formed of attribute pair value with a non-recursive data structure as said
> value.

Appellant argues on page 23 of the brief that "[t]here is no discussion of such

structures in the cited Haddock reference."

On page 19 of the answer, the examiner argues that Haddock teaches that after

the ambiguity is resolved the query can be translated into a database query which reads

on using non-recursive data structures.

-12-

We concur with the examiner. The plain meaning of the term "recursion" is an expression, each term of which is determined by application of a formula to preceding terms. This definition is consistent with the appellant's specification, which identifies that it is preferable that each value of the state vector be a simple structure as opposed to another state vector (see page 19 of appellant's specification). Thus, the scope of this limitation of claim 24 excludes state vectors which have values that are derived from preceding state vectors. We note that claim 24 is dependent upon claim 23. The scope of claim 23 includes developing a first representation of a current query, developing a second representation from a previous query and developing a third representation by merging the first and second query if the first query includes only one of two variable types. We also note that claim 24 is ambiguous as to which of the representations in claim 23 are addressed by claim 24. As the merging of the first (current) and second (past) representation limitation of claim 23 is recursive in nature, it would be contrary to claim 23 to interpret the limitations of claim 24 as applying to either the first or second representation. Accordingly, we have interpreted claim 24 as being directed to developing the state vector for the third representation.

As stated *supra,* we find that claim 23 is unpatentable over Haddock and that Haddock teaches developing state vector representing a spoken query. We do not find that Haddock teaches that the values of the generated state vector are recursive. In the example of query 2 discussed in column 6, lines 48 through 60, the resolved state vector, (WHICH X s.t. (Paint DEGAS X)), is not recursive. Accordingly, we sustain the rejection of claim 24 under 35 U.S.C. § 103.

-13-

Finally, we consider the rejection of claims 26 through 30 under 35 U.S.C. § 103 as being unpatentable over Haddock in view of Junqua. Appellant has presented no arguments directed to the rejection of these claims.

Claims 26 through 30 are all ultimately dependent upon claim 23. As stated *supra,* we sustain the examiner's rejection of claim 23 under 35 U.S.C. § 103. Accordingly, we also sustain the examiner's rejection of claims 26 through 30 under 35 U.S.C. § 103.

Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief or by filing a reply brief have not been considered and are deemed waived by appellant (see 37 CFR § 1.192(a)) Support for this rule has been demonstrated by our reviewing court in *In re Berger* 279 F3d 975, 984, 61 USPQ2d 1523, 1528-1529 (Fed. Cir. 2002) wherein the Federal Circuit Court stated that because the appellant did not contest the merits of the rejections in his brief to the Federal Circuit Court, the issue is waived. **See also *In re Watts*** 354 F.3d 1362, 1368, 69 USPQ2d 1453, 1458 (Fed. Cir. 2004).

In summary, we sustain the examiner's rejection of claims 1 through 3 and 6 through 10 under 35 U.S.C. § 102 and the examiner's rejection of claims 4, 5, 11 through 13, 18, 23, 24 and 26 through 30 under 35 U.S.C. § 103. However, we reverse the examiner's rejection of claims 14 through 17,19, 20, through 22 and 25 under 35 U.S.C. § 103.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal

may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

ERROL A. KRASS   )
Administrative Patent Judge   )
)
)
)
)
)
LANCE LEONARD BARRY   )   BOARD OF PATENT
Administrative Patent Judge   )   APPEALS AND
)   INTERFERENCES
)
)
)
)
ROBERT E. NAPPI   )
Administrative Patent Judge   )

REN:clm

Timothy N. Trop
Trop, Pruner, Hu & Miles, P.C.
8554 Katy Freeway
Suite 100
Houston, TX 77024